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# Appendix C

# Maps and Tables of INEEL Potential Site-wide Well Network

**Table C-1.** (continued)

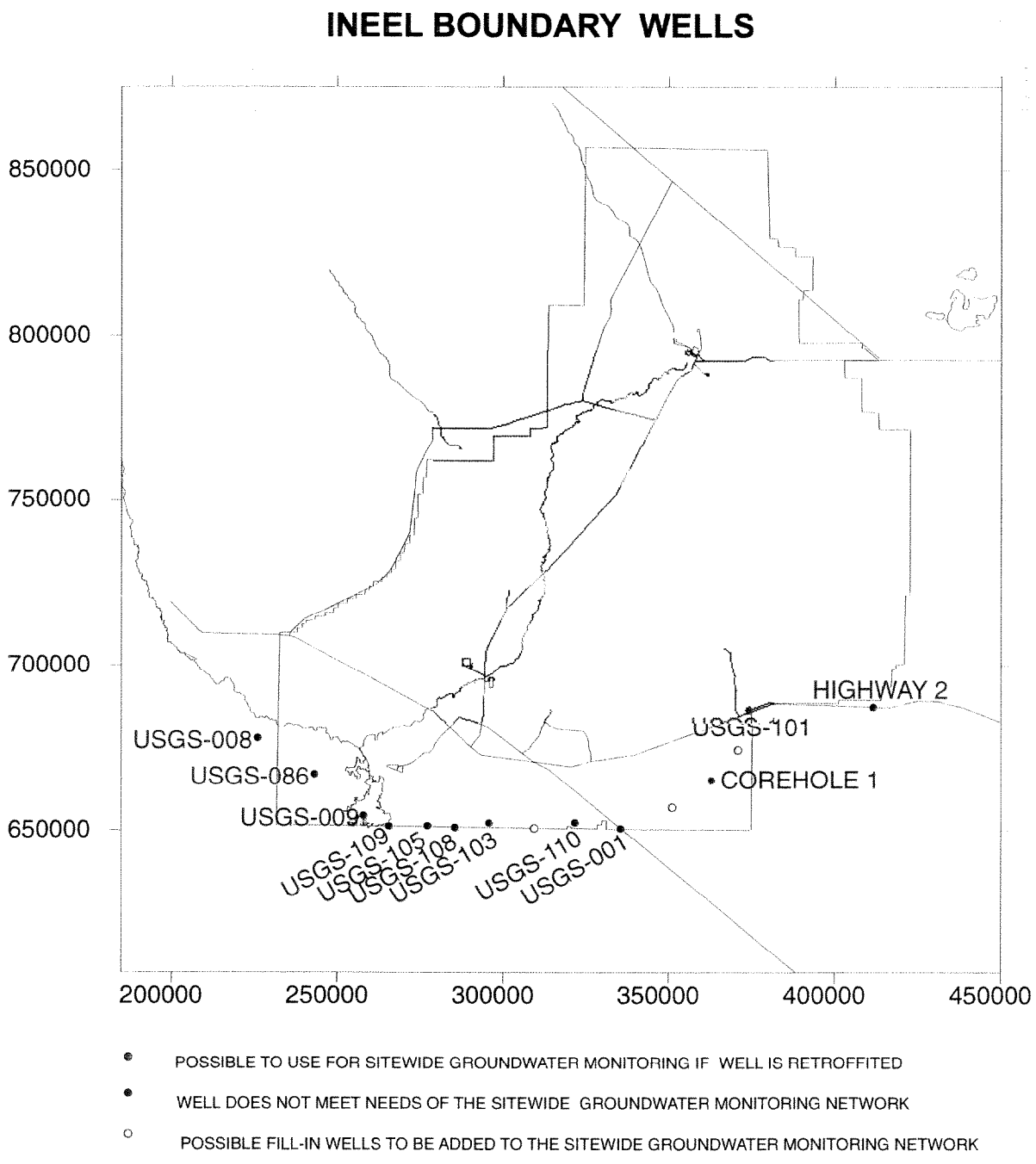



**Figure C-1.** Map of the INEEL Site-Wide Well Network Boundary Wells.

**Table C-1.** INEEL Site-wide Well Network Boundary Wells.

| WELL_NAME | NORTH_27 | EAST_27 | OWNER | PUMP DEPTH | SCREEN TOP_BLS | SCREEN BOT_BLS | WELL TYPE | FACILITY | BOREHOLE DEPTH | COMPLETION DEPTH | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COREHOLE 1 | 665174.571 | 362883.559 | U.S. DOE | NF | 1905 | 1915 | Obs | SOUTH | 2002 | 2002 | Perforated 2" carbon steel screen installed in 1979, open hole from 1915 to 2002 ft Water level ~ 930 ft, no pump-last active in 1979 ? | Small casing diameter makes the borehole unsuitable for monitoring w/ dedicated pump |
| USGS-001 | 650509.14 | 335610.808 | USGS | 612 | 600 | 630 | Obs | SOUTH | 635.7 | 635.7 | Perforated 5" Carbon steel screen installed 1949. Water level ~587. Pump @ 612. Lead packer at casing reduction (421 FT).currently active | May not be acceptable for monitoring metals, but should be fine for monitoring rad, and select chemical constituents. |
| USGS-008 | 678015.33 | 226141.02 | USGS | 801 | 781.84 | 811.96 | Obs | OFFSITE | 812 | 812 | Water level~762, Pump @801, Galvanized water access line, Perforated 6" Carbon steel screen installed 1951. Should be retrofitted | May not be acceptable for monitoring metals, but may be fine for monitoring rad, and select chemical constituents |
| USGS-009 | 654491.92 | 258101.051 | USGS | 635 | 620.14 | 650.14 | Obs | SOUTH | 654.14 | 654.14 | Perforated 6" Carbon steel screen installed 1951, Water level ~ 601, Galvanized water access line, Pump @ 635. Currently active/sampled | May not be acceptable for monitoring metals, but may be fine for monitoring rad, and select chemical constituents |
| USGS-086 | 667053.21 | 243371.419 | USGS | 678 | 48 | 691 | Obs | SOUTH | 691 | 691 | 8" surface casing to 48 ft, open hole (8 in ?) below. Water level ~643, Pump @678. W/out annular seal ??. May not meet basic cnst standards. Currently active/sampled by USGS | Open borehole may be suitable for vertical profiling. Well may be suitable for monitoring if the well is completed with casing and screen installed in the desired interval or w/packer unit |
| USGS-101 | 686264.547 | 374809.428 | USGS | 790 | 750 | 865 | Obs | SOUTH | 865 | 865 | Perforated 4" Carbon steel screen installed 1974. Water level ~ 766. Galvanized discharge line, PVC water access line, Pump intake @ 790, Quality of annular seal is ?? | May not be acceptable for monitoring metals, but may be fine for monitoring rad, and select chemical constituents needs retrofitting; activ. Samp. |
| USGS-103 | 652206.339 | 295938.213 | USGS | 700 | 575 | 760 | Obs | SOUTH | 760 | 760 | 8" Carbon steel casing to 575 ft, installed in 1980, 8" open hole below. Water level~582 ft, Galvanized water access line, Pump @ 615, Annular seal to 40 ft. May require retrofitting w s.s. well is current sampled by USGS | Open borehole may be suitable for vertical profiling. Well may be suitable for monitoring if the well is completed with casing and screen installed in the desired interval |
| USGS-105 | 651355.361 | 277395.306 | USGS | 700 | 400 | 800 | Obs | SOUTH | 800 | 800 | 8" Carbon steel casing to 400 ft, 8" open hole below, Water level~669, Pump @700. Annular seal to 30 ft, Galvanized discharge (and water access?) lines, retrofit w/ S.S., activ samp by usgs | Open borehole may be suitable for vertical profiling. Well may be suitable for monitoring if the well is completed with casing and screen installed in the desired interval or packer unit |

**Table C-1.** (continued)

| WELL_NAME | NORTH_27 | EAST_27 | OWNER | PUMP DEPTH | SCREEN TOP_BLS | SCREEN BOT_BLS | WELL TYPE | FACILITY | BOREHOLE DEPTH | COMPLETION DEPTH | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USGS-108 | 650807.007 | 285611.423 | USGS | 637 | 400 | 760 | Obs | SOUTH | 760 | 760 | 8" Carbon steel casing to 400 ft, 8" open hole below, Water level ~ 607, Pump @ 637, Galvanized discharge (and water access?) lines. Retrofit. W/ s.s. Well current sampled by USGS | Open borehole may be suitable for vertical profiling. Well may be suitable for monitoring if the well is completed with casing and screen installed in the desired interval or packer unit |
| USGS-109 | 651255.188 | 265735.781 | USGS | 656 | 600 | 800 | Obs | SOUTH | 800 | 800 | 4" Perforated carbon steel screen installed in 1980, Water level~620. Pump @ 619 (right at the water table). Annular seal to 30 ft. Galvanized discharge line. S.S. retrofit; activ samp | May not acceptable for monitoring metals, but may be fine for monitoring rad, and select chemical constituents. Possibly packer off the desired monitoring interval |
| USGS-110 | 652325.738 | 321866.503 | USGS | 612 | 580 | 780 | Obs | SOUTH | 780 | 780 | 6" Perforated carbon steel screen installed in 1980, Water level~ 569, Pump @ 612 ft, Annular seal to 25 ft, Galvanized discharge line, PVC water access line. Retrofit w/ S.S. activ sampled by USGS | May not acceptable for monitoring metals, but may be fine for monitoring rad, and select chemical constituents. Possibly packer off the desired monitoring interval |
| HIGHWAY 2 | 687427.66 | 411631.14 | USGS | | | 741 | | OFFSITE | 786 | 786 | 8" carbon steel casing to T.D.;initial water level @718' with interbed near completion depth. Apparently no pump; will have to retrofit | May not be suitable for monitoring metals but location is ideal as a guard well or pt of compliant well; activ sampled by USGS |

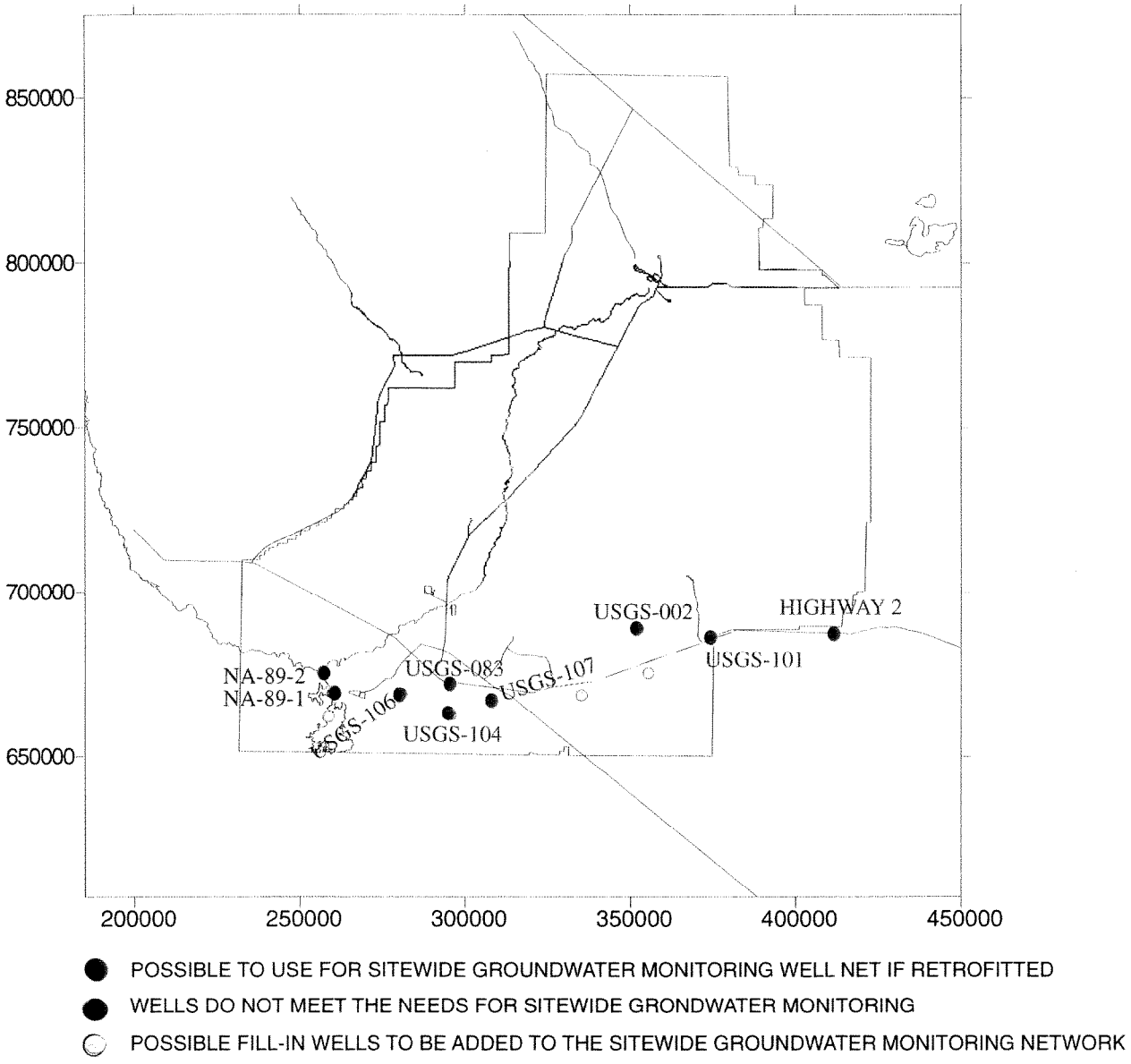



**Figure C-2.** Map of INEEL Site-wide Well Network Guard Wells.

**Table C-2.** INEEL Site-wide Well Network Guard Wells.

| OWNER | PUMP DEPTH_BLS | SCREEN TOP_BLS | SCREEN BOTTOM_BLS | SCREEN_2 TOP_BLS | SCREEN_2 BOTTOM_BLS | FACILITY | BOREHOLE DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | CONCLUSIONS-RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|
| NF | NA | NA | NA | | | RWMC | 238 | NA | Not an aquifer well-vadose zone | Not useable for monitoring |
| NF | NA | NA | NA | | | RWMC | 235 | NA | Not an aquifer well-vadose zone | Not useable for monitoring |
| USGS | | 741 | 786 | | | OFFSITE | 786 | 786 | 8" carbon steel casing to T.D.;initial water level @718' with interbed near completion depth. Apparently no pump | Will have to retrofit for sampling and may not be suitable for monitoring metals but location is ideal as a guard well or point of compliant well |
| USGS | 606 | 516 | 752 | | | SOUTH | 752.0 | 752.0 | 6" cs casing to 516 ft bls, open hole below, water level ~496 ft, Pump @ 606 ft, Conflicting data-USGS/HDR | May not be suitable for metals but good situation for vertical profiling. Will have to determine conflicting nature-if important |
| USGS | 592 | 550 | 700 | | | SOUTH | 700 | 700 | 12" surface casing to 10 ft, 8" well casing to 550 ft, open hole below. Questionable annular seal, Water level ~ ?, Pump @ 598. | 10 ft of surface seal does not meet State Code. Could possibly install casing and screen in the open borehole to the desired depth, and install sand pack |
| USGS | 609 | 400 | 605 | 605 | 760 | SOUTH | 760 | 760 | 12" surface casing to 10 ft, 8" well casing to 400 ft, open hole below, Water level~ 587, Pump @ 585 ft, | 10 ft of surface seal does not meet State Code. Could possibly install casing and screen in the open borehole to the desired depth, and install sand pack |
| USGS | 531 | 270 | 690 | | | SOUTH | 690 | 690 | 12" surface casing to 10 ft, 8" casing to 200 ft, 6" casing to 270 ft, water level ~ 479, Pump @ 509, Questionable annular seal | 10 ft of surface seal does not meet State Code, could possibly install casing and screen in the open borehole to the desired depth, and install sand pack |
| USGS | 790 | 750 | 865 | | | SOUTH | 865 | 865 | Perforated 4" Carbon steel screen installed 1974. Water level ~ 766, Galvanized discharge line, PVC water access line, Pump intake @ 790, Quality of annular seal is questionable | May not acceptable for monitoring metals, but may be fine for monitoring rad, and select chemical constituents |
| USGS | 683 | 675 | 696 | | | south | 704 | 704 | 6.25" c.s. casing to 434', then 5" c.s. cs to T.D.w/ perf. scrn;initial water level @ 651',w/ pump @683. | Good location-maintained well, may not be suitable for monitoring metals;annular seal is ?-recommended as a guard well |

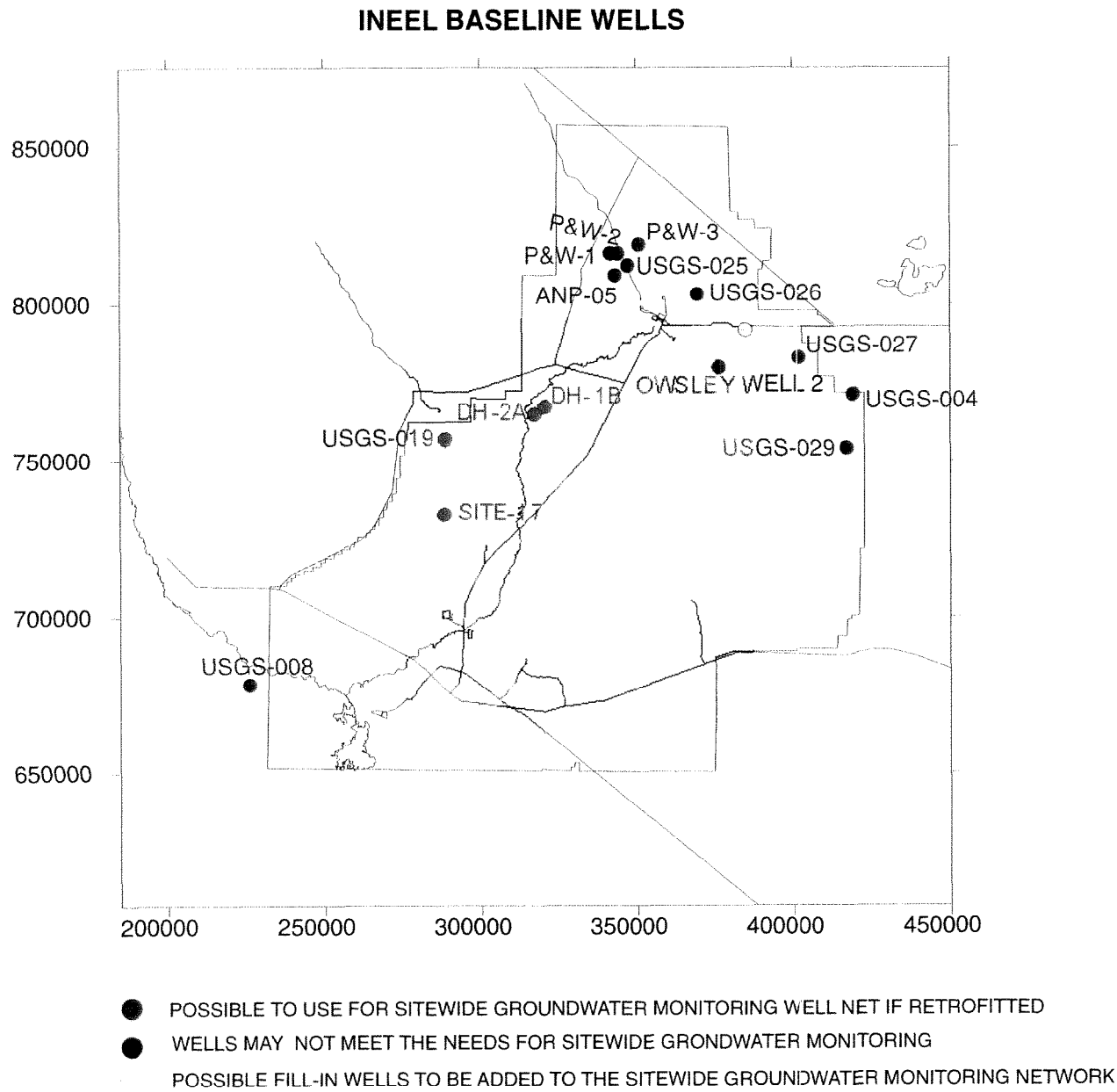



**Figure C-3.** Map of INEEL Site-wide Well Network Baseline Wells.

**Table C-3.** INEEL Site-wide Well Network Baseline Wells.

| WELL ID | WELL NAME | COMP DEPTH | N_27 | E_27 | ELEV. _29 | YR _DRILLED | WELL DEPTH | W_L_ DEPTH | W_L _DATE | PUMP MANUFACT | PUMP DEPTH TOP | SCREEN DEPTH TOP | SCREEN DEPTH BOTTOM | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73 | ANP-05 | 395.5 | 809231.75 | 343175.75 | 4873.99 | 1956 | 395.5 | 291.32 | 05/26/56 | na | na | 296.24<br>332.14 | 316.44<br>389.94 | Both screened intervals are perforated 10" carbon steel installed in 1956, Waterlevel ~ 291 ft, No pump, Water access line into the water. Clay soil used for annular seal 0-276 ft. Gravel pack from 276-390 ft no isolation of screen intervals | May not be useful for monitoring metals because of the casing/screen material, Questionable annular seal quality. Could be retrofitted |
| 147 | DH-1B | 380 | 767163.76 | 320726.77 | 4792.3 | 1984 | 400 | 268.08 | 07/19/85 | none | | open hole | 380-400' | 8" c.s. surf cs to 10';6" c.s. cs to 380' with open borehole to T.D. conflicting data on annular seal, active water level-responsive to fluct. | good location-can easily be retrofitted but with annular seal(?) and with several thick sections of sediment may be suspect as a baseline well |
| 148 | DH-2A | 415 | 764799.31 | 317427.28 | 4794.849 | 1984 | 430 | 272.03 | 07/19/85 | none | | open hole | 415-430' | 8" c.s. surf cs to 10';6" c.s. cs to 415' with open borehole to T.D.conflicting data on annular seal, active water level-responsive to fluct. | good location-can easily be retrofitted but with annular seal(?) and with several thick sections of sediment may be suspect as a baseline well |
| 247 | OWSLEY WELL 2 | 309.9 | 779798.14 | 376358.72 | 4786.87 | 1949 | 309.9 | 222.59 | 11/16/49 | none | na | na | na | 8" c.s.surf cs-4.25'CS TO 208';open hole to 309'.originally drilled to 291 in 1949-deeped to T.D. in 1950 | well is active but not sampled;could be retrofitted but may not be in good location for baseline except as backup |
| 248 | P&W-1 | 430 | 816095.75 | 341603.88 | 4895.61 | 1957 | 434.4 | 317 | 07/01/57 | na | na | 321.9 | 371.9 | Perforated 10" carbon steel screen installed in 1957, Water level ~ 317 ft, No pump, clay soil used for annular seal with cement plug at 262-300 ft, gravel below | May not be useful for monitoring metals because of the casing/screen material, Questionable annular seal quality. Could be retrofitted |
| 249 | P&W-2 | 385.95 | 816095.75 | 344004.13 | 4890.88 | 1957 | 385.95 | 311 | 09/06/57 | na | 342 | 312 | 382 | Perforated 10" carbon steel screen installed in 1957. Water level ~311 ft. Pump @ 342. Clay soil used for annular seal with cement plug at 286-292 ft, gravel below. | May not be useful for monitoring metals because of the casing/screen material, Questionable annular seal quality. Could be retrofitted |

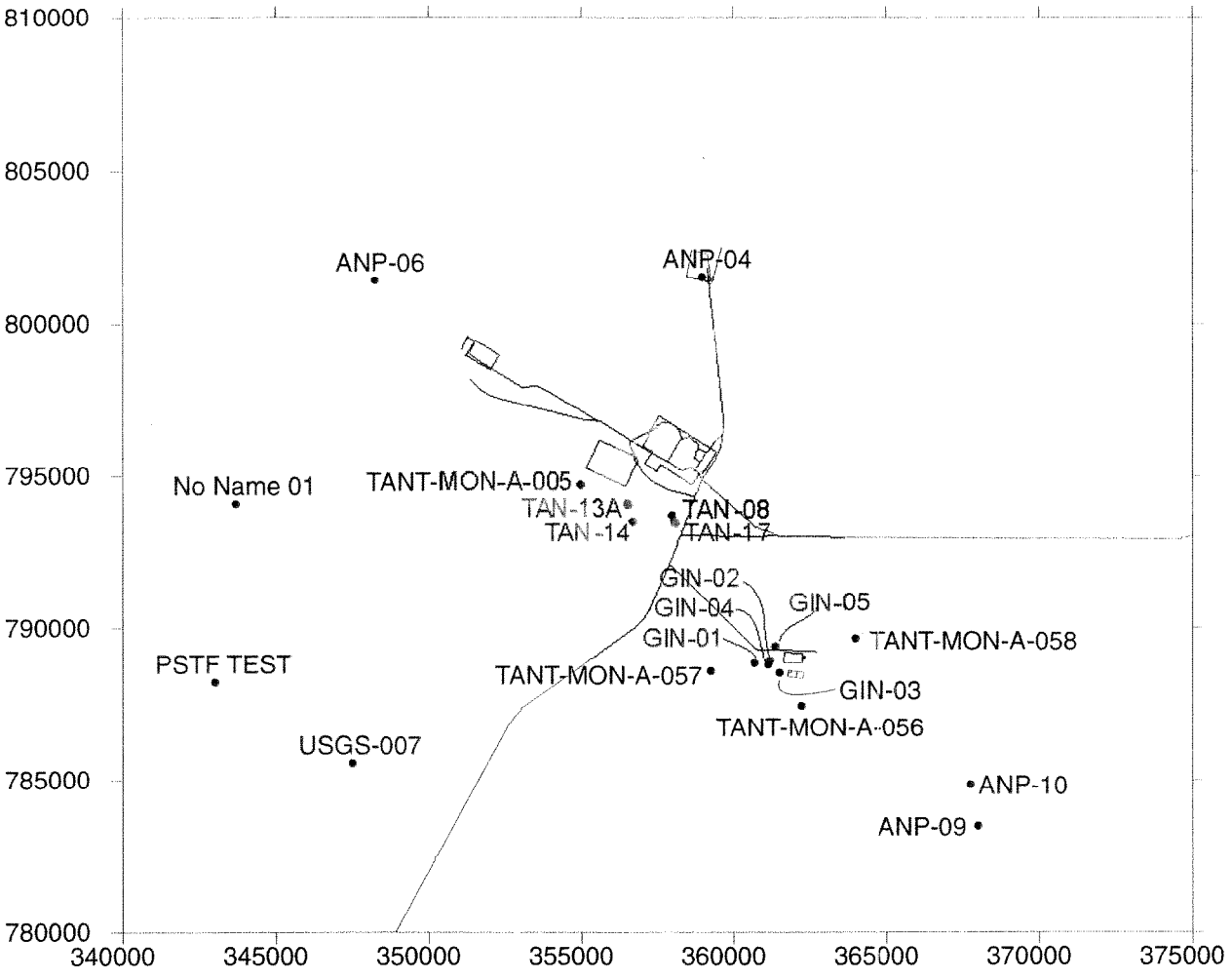
**Table C-3.** (continued).

| WELL ID | WELL NAME | COMP DEPTH | N_27 | E_27 | ELEV. _29 | YR _DRILLED | WELL DEPTH | W_L_ DEPTH | W_L _DATE | PUMP MANUFACT | PUMP DEPTH TOP | SCREEN DEPTH TOP | SCREEN DEPTH BOTTOM | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 250 | P&W-3 | 406.26 | 818797.24 | 350802.53 | 4885.34 | 1957 | 406.26 | 307 | 11/00/57 | na | na | 322 | 401 | Perforated 10" carbon steel screen installed in 1957. Water level ~ 307 ft. No pump, Clay used for annular seal, with cement plug at 285-288 ft, gravel below. Large screened interval | May not be useful for monitoring metals because of the casing/screen material, Questionable annular seal quality. Could be retrofitted |
| 278 | SITE-17 | 600 | 732589.01 | 288598.64 | 4880.512 | 1960 | 600 | 392 | 6/1/65 | Grundfos | 442 | open hole | to T.D. | 18" surface casing to 15 ft, 15" open borehold below, drilled 1960, Water level ~ 392 ft, Pump @ 443, | 15ft of surface casing does not meet State code, Large open borehole could be retrofitted, |
| 453 | USGS-004 | 553 | 771126.17 | 419184.76 | 4791.319 | 1950 | 553 | 254.3 | 3/15/50 | Grundfos | 303 | 285 | 315 | surface and annular seal is ?; 6.25" c.s. cs to 322'-4" open hole to T.D. (553'). Water level @ 254 w/ pump @ 303; cs in perf 285-315 | may not meet RCRA or be suitable for monitoring metals but is in a good location for baseline monitoring; well is active |
| 457 | USGS-008 | 812 | 678015.33 | 226141.95 | 5195 | 1950 | 812 | 761.37 | 8/30/50 | Grundfos ? | 801 | 782 | 812 | 6.25' C.S. CS TO 812'(td), perf bottom 30';water level @ 761'. Pump set @ 801. No seal (?)-Sampled annually | good location-may not be useful for metals; could also be used for vertical profiling(?) and can be retrofitted |
| 474 | USGS-025 | 320 | 812272.22 | 347254.46 | 4849.44 | 1952 | 320 | 267.29 | 10/09/52 | none | | 285 | 320 | 6.25" borehole, 6.25" casing and perforated carbon steel screen installed in 1952. No annular seal, or filter pack. Water level ~ 267, No pump | May not be useful for monitoring metals. Smaller casing will make it difficult to retrofit with smaller casing and screen. |
| 475 | USGS-026 | 266 | 803222.19 | 369554.53 | 4789.8 | 1952 | 266 | 208 | 10/27/52 | na | 255 | 232 | 266 | 6.25" c.s. cs, perforated bottom 34'; with sub pump. May not meet RCRA no seal? | active & samp by USGS-good baseline location |
| 476 | USGS-027 | 312 | 782870.4 | 401830.07 | 4785.004 | 1952 | 312 | 224.27 | 12/14/52 | Grundfos | 262 | 250<br>298 | 260 308 | 12" borehole to 137 ft, 8" borehole below. 6.25 " carbon steel casing and perforated screen. No info about annular seal or filter pack. Water level ~ 224 ft. Pump @ 262. Sampled annually. | May not be useful for monitoring metals. Smaller casing will make it difficult to retrofit with smaller casing and screen. |

**Table C-3.** (continued).

| WELL ID | WELL NAME | COMP DEPTH | N_27 | E_27 | ELEV. _29 | YR _DRILLED | WELL DEPTH | W_L_ DEPTH | W_L _DATE | PUMP MANUFACT | PUMP DEPTH TOP | SCREEN DEPTH TOP | SCREEN DEPTH BOTTOM | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 478 | USGS-029 | 425.5 | 754015.45 | 417019.16 | 4878.635 | 1953 | 425.5 | 348.47 | 04/25/53 | Grundfos | 402 | 398 | 425.5 | 6.25" c.s. cs to 328'-5.6" to 398'; perf 328-363. 4" open borehole to T.D. annular seal is ? | may not be useful for monitoring metals because of the casing/screen material, Questionable annular seal quality. Could be retrofitted. May not be an ideal baseline well due to location but is a good candidate as a backup |

# TEST AREA NORTH
# LONG TERM GROUNDWATER MONITORING




● Possible to use for sitewide groundwater monitoring well net if retrofitted

● Wells do not meet the needs for sitewide groundwater monitoring

Possible fill-in wells to be added to the sitewide groundwater monitoring network

**Figure C-4.** Map of INEEL Site-wide Well Network TAN Wells (WAG 1).

**Table C-4.** INEEL Site-wide Well Network TAN Wells (WAG 1).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANP-04 | 801549.28 | 358959.91 | 233 | 219 | 319 | | | | | 329 | 324 | Perforated 12' carbon steel casing installed in 1953, Water level ~ 209 ft. Pump @ 237? Gravel pack from land surface to 324 ft bls. Well was originally drilled as a disposal well. Sampled annually, large screened interval | Good location. Recommended not to use. No annular seal, gravel pack provides a conduit to the aquifer. Well was drilled to be a disposal well for ??, |
| ANP-06 | 801438.91 | 348250.23 | 323 | 210.6 | 255.6 | 265.66 | 295.82 | | | 305.25 | 305.25 | 10.25" cs casing to 210 ft with soil annular fill with cement plug at bottom. 10.25" cs perforated screen 210-255, and 265-295 ft with gravel pack. No isolation of screened intervals. Water level ~ 214 ft. Well drilled 1956. | Easy retrofit, but no way to isolate screened intervals. Soil annular seal is not recommended |
| ANP-09 | 783502.53 | 367997.94 | NE | 236.64 | 313.84 | | | | | 322.0 | 321.8 | 8" cs casing to 237 ft. Perforated 8" cs screen 237-314 ft installed in 1956. Water level ~ 223 ft, no pump. Clay annular seal, gravel packed screen. Large screened interval. | Good location. Could be retrofitted. May not be suitable for monitoring metals. |
| ANP-10 | 784857.57 | 367747.13 | 450 | 552.44 | 675.98 | | | | | 681 | 681 | 10" cs casing to 552 ft, perforated 10" cs screen 552-675. Water level ~ 220 ft, pump ? Puddling clay used for annular seal to ~200 ft, gravel pack below. Large screened interval. | Good location but not recommended because cs casing extends ~ 330 ft below the water table. Also large screened interval with no way of sealing off zones. |
| GIN-01 | 788853.58 | 360674.02 | NE | 48 | 373 | | | | | 373 | 373 | 8.6" cs casing to 48 ft. 8" open borehole 48-373 ft. Water level 208 ft. | Not recommended, large open borehole interval . |
| GIN-02 | 788929.61 | 361168.29 | 368.5 | 43 | 402 | | | | | 402 | 402 | 8.6" cs casing to 43 ft. 6" open borehole 43-402 ft. Water level 209 ft. | Not recommended, large open borehole interval . |

**Table C-4.** (continued).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GIN-03 | 788531.35 | 361484.1 | NE | 176 | 386 | 40 | 130 | | 386 | 386 | 8.6" cs casing to 38 ft. 6.6" cs casing38-40 ft. 6.6" perforate cs screen 40-130 ft. 6.6" cs casing 130-176 ft. 6.6" open borehole 176-386 ft. No annular seal. Water level ~ 210 ft. | Not recommended, large open borehole interval . |
| GIN-04 | 788922 | 361118.68 | 291.4 | 41 | 306 | | | | 306 | 306 | 8.6" cs casing to 41 ft. 6" open borehole 41-306 ft bls. Water level ~ 209 ft. | Not recommended, large open borehole interval . |
| GIN-05 | 789392.61 | 361355.94 | NE | 30 | 430 | | | | 430 | 430 | 4.6" cs casing to 30 ft. 4" open borehole 30-430 ft. Water level ~ 207 ft. | Not recommended, large open borehole interval . 4" diameter difficult to retrofit. |
| GIN-06 | 796383.15 | 350926.6 | NA | NA | NA | | | | 200 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-07 | 796801.32 | 350303.25 | NA | NA | NA | | | | 200 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-08 | 796509.49 | 349560.26 | NF | 108 | 122.5 | | | | 203 | 122.5 | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-09 | 795588.62 | 350930.78 | NA | NA | NA | | | | 203 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-10 | 795731.28 | 349433.28 | NA | NA | NA | | | | 163 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-11 | 797011.9 | 348961.05 | NA | NA | NA | | | | 163 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-12 | 796045.25 | 348453.66 | NA | NA | NA | | | | 142 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-13 | 797507.59 | 349680.62 | NA | NA | NA | | | | 141 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-14 | 796282.61 | 349883.26 | NA | NA | NA | | | | 75 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-15 | 796432.47 | 349376.47 | NA | NA | NA | | | | 75 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-16 | 796611.66 | 349570.82 | NA | NA | NA | | | | 75 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-17 | 796459.75 | 349568.5 | NA | NA | NA | | | | 78 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |

**Table C-4.** (continued).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GIN-18 | 796278.99 | 349888.36 | NA | NA | NA | | | | | 200 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-19 | 796353.71 | 349192.25 | NA | NA | NA | | | | | 200 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| GIN-20 | 796902.83 | 349608.57 | NA | NA | NA | | | | | 200 | NA | Shallow gas port well not into the aquifer. | Not an aquifer well |
| TAN-08 | 793502.29 | 358066.66 | 235 | 228.6 | 250 | | | | | 252 | 250 | 4" casing to 228 ft 4" slotted screen to 228-250 ft installed 1989 (carbon steel??). Water level ~ 211 ft, pump @ ?. Good annular seal materials | Good location, recommend for use. Could be retrofitted. Uncertain of casing material. |
| TAN-13A | 794111.24 | 356524.68 | 221 | 216 | 236 | NF | NF | | | 244 | 244 | 4" casing to 216 ft, 4" ss wire wrapped screen 216-236 ft. Waterlevel ~ 197 ft. No pump. Good annular seal material. | Good location. Could be retrofitted. |
| TAN-14 | 794053.81 | 356549.39 | 380.5 | 376 | 396 | NF | NF | | | 404.0 | 398 | 4" ss casing to 379 ft, 4" ss wire wrap screen 376-396 installed 1990. Water level ~ 198 ft, no pump. Good annular seal material | Good location, but cased and sealed 180 ft into the water, not recommended |
| TAN-17 | 793496.62 | 358109.21 | 327.5 | 320.0 | 340.0 | NF | NF | | | 351.1 | 351.1 | 2" casing and screen | Not recommended, can't retrofit 2" well casing |
| TANT-MON-A-056 | 787452.99 | 362203.48 | na | 200 | 460 | | | | | 460 | 200 | 10" cs casing to 200 ft with bentonite annular fill. Open borehole 200-460. Water level ~ 216 | Good location. Large open borehole interval, but could be retrofitted, |
| TANT-MON-A-057 | 788589.16 | 359255.9 | na | 200 | 491 | | | | | 491 | 200 | 10" cs casing to 200 ft with bentonite annular fill. Open borehole 200-491. Water level ~ 219 | Good location. Large open borehole interval, but could be retrofitted, |
| TANT-MON-A-058 | 789665.91 | 363978.29 | na | 200 | 483 | | | | | 483 | 200 | 10" cs casing to 200 ft with bentonite annular fill. Open borehole 200-483. Water level ~ 217 | Good location. Large open borehole interval, but could be retrofitted, |
| TANT-MON-A-005 | 794716.664 | 354982.965 | 231 | NF | NF | NF | NF | | | 254 | 247 | 5" ss screen 207-247 installed 1996. Good annular seal material. Water level ~212ft. Pump @ 231ft. | Good location, could be retrofitted. |

**Table C-4.** (continued).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USGS-007 | 785570.36 | 347517.78 | 242 | 241 | 261 | 760 | 940 | 940 | 1200 | 1200 | 1200 | 6" cs casing to 760. Slotted cs screen 241-261. Open borehole 760-1200. Water level ~ 216ft. Pump @ 242. No annular seal? | Good location, but not recommended for monitoring, because 500 ft of casing below the water without any way to isolate zones |
| PSTF TEST | 788226.67 | 343020.01 | 242 | 189.78 | 315.85 | | | | | 322.15 | 319.26 | 10" cs casing to 190 ft. 10" perforated cs casing 190-316 ft installed in 1957. Water level ~ 208, Pump @ 242. Gravel fills the annular space from land surface to bottom. Large screened interval. | Good location, but not recommended because annular seal is gravel from land surface to bottom. Also has very large screened interval with no way to isolate zones. |
| No Name 01 | 794100.61 | 343701.21 | 242 | 265 | 550 | | | | | 550 | 265 | 12.75" cs casing to 265. Annular seal?? 12" open borehole 265-550. Water level ~ 203 ft. Drilled in 1963. | Upper 60 ft of the aquifer cased off with cs casing. Large open borehole interval. Could be retrofitted but not recommended. |

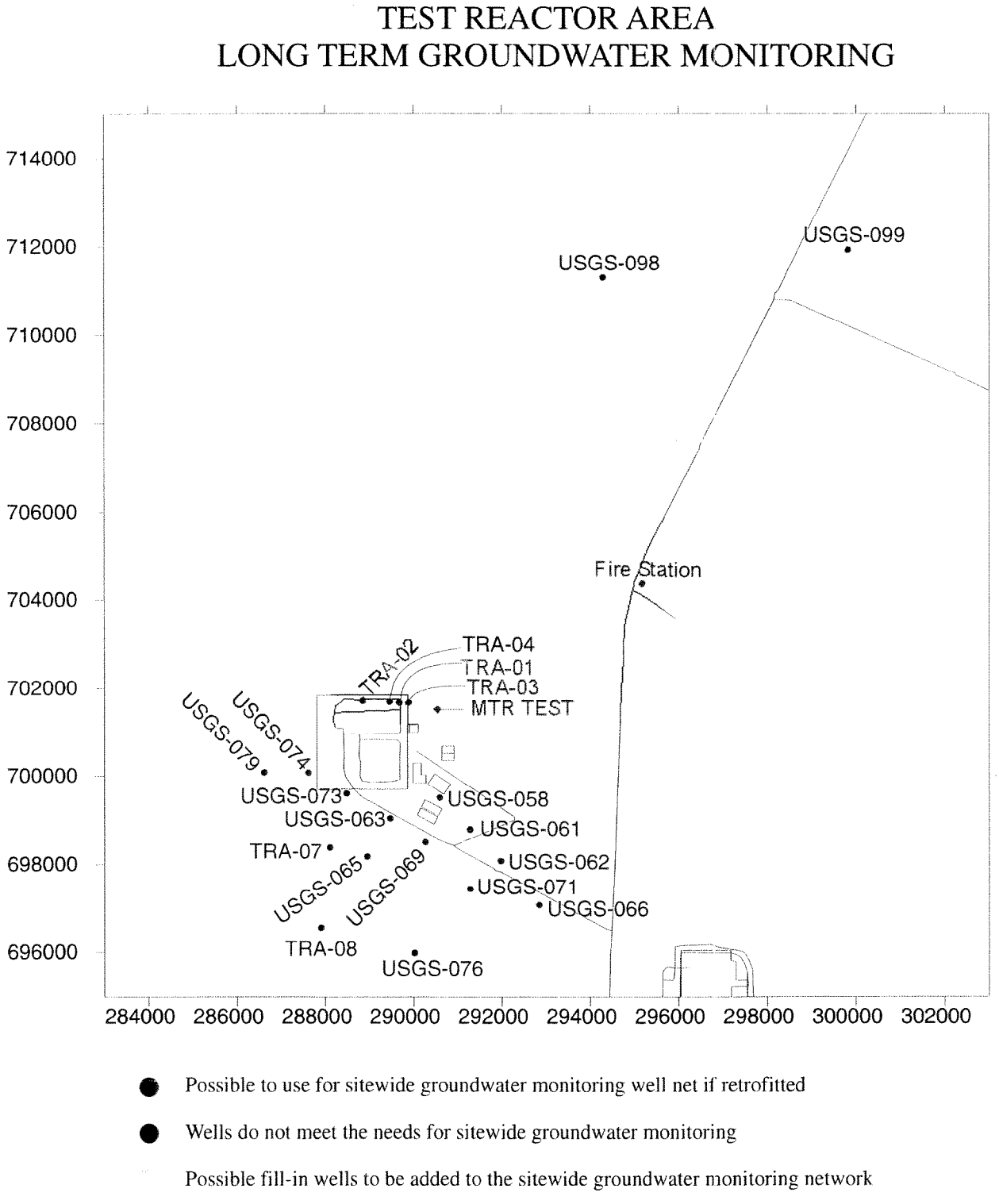


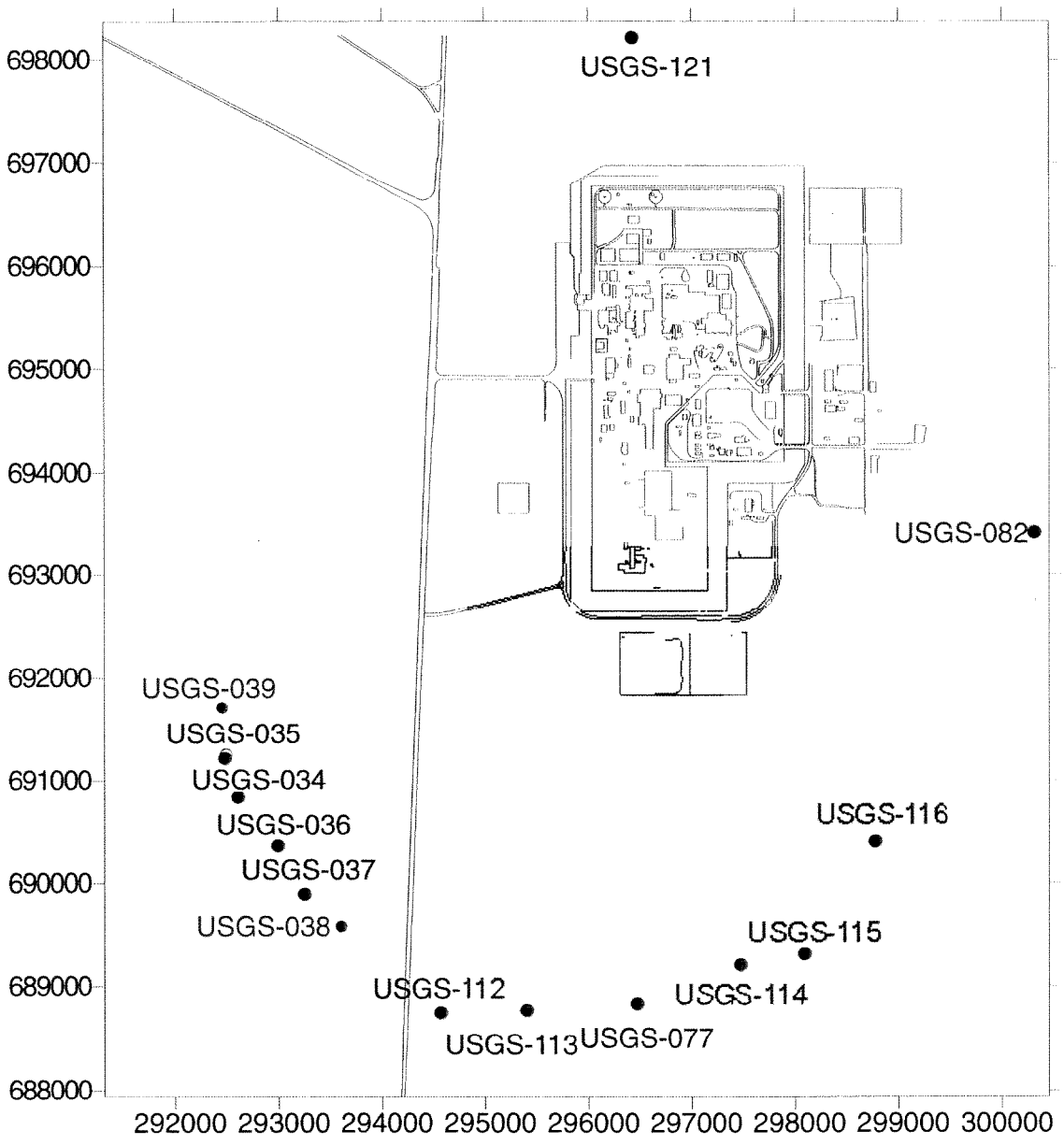

**Figure C-5.** Map of INEEL Site-wide Well Network TRA Wells (WAG 2).

**Table C-5.** INEEL Site-wide Well Network TRA Wells (WAG 2).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|
| MTR TEST | 701510.3 | 290544.38 | 493 | 447 | 588 | | | 588 | 8" cs casing to 447, no annular seal. 8" perforated cs screen 447-588. Water level ~ 453. Well drilled in 1949 | Large screened interval with no way to isolate monitoring intervals. May not be suitable for monitoring metals. Not recommended. |
| TRA-01 | 701665.17 | 289689.58 | 526 | 480 | 580 | | | 600 | 18" cs casing to 480 ft with native fill material for annular seal. 18" perforated cs screen 480-580 ft with gravel pack. Water level ~ 453 ft. Well installed in 1950 | The well is in a good location for monitoring provided that the native fill for annular seal and large screened interval are acceptable |
| TRA-02 | 701704.71 | 288859.71 | 617 | 490 | 567 | 640 | 740 | 772 | 18" cs casing to 490 with native fill annular seal. 18" perforated cs screen. 490-566. 8" perforated cs screen 640-740. Water level ~462. Well drilled 1952 | The well is in a good location for monitoring provided that the native fill for annular seal and large screened interval are acceptable |
| TRA-03 | 701664.6 | 289890.5 | 585 | 470 | 497 | 518 | 592 | 602 | 20" cs casing with clay annular seal to 470 ft. 20" perforated cs screen 470-497, and 518-592. Water level~ 457. Well drilled in 1957. | Not recommended because of native fill annular seal. Large screened interval with no way to isolate monitoring zones |
| TRA-04 | 701708.95 | 289417.36 | NA | 900 | 965 | | | 972 | 20" cs casing to 418 ft with cement seal from 300-418 ft, 18" cs casing to 765 ft, 16" cs casing to 900 ft, 16" perforated cs screen 900-965 with no documentation of annular fill. Water level ~ 463. Well drilled 1963. | Not recommended, well is cased ~ 450 ft into the aquifer. |
| TRA-06 | | | | | | | | | No well file | |
| TRA-07 | 698374 | 288109 | NF | 463 | 493 | | | 501 | 4" ss casing to 463 ft with cement annular seal. 4" wire wrapped ss screen 463-493. Water level ~ 474. Drilled in 1990 | Good well construction, but 4" diameter may make retrofitting difficult. Well only penetrates upper 20 ft of aquifer |
| TRA-08 | 696552 | 287909 | 487 | 471.5 | 501.5 | | | 501.5 | 6" cs casing with cement annular seal to 405 ft. 4" ss casing 395-471 ft. K packer at casing reduction. 4" wire wrapped ss screen 471-501. Water level ~ 477 ft. Drilled in 1990 | Good well construction, but 4" diameter may make retrofitting difficult. Well only penetrates upper 25 ft of aquifer |
| USGS-058 | 699499.23 | 290595.68 | 482 | 218 | 473 | | | 503 | 6.6" cs casing to 218 ft with cement annular seal. 6" open borehole 218-473 ft. 5.5" open borehole 473-503 ft. Water level ~ 460 ft. | Large open borehole interval. Can be retrofitted but not recommended |
| USGS-061 | 698784.311 | 291282.088 | 110 | 89 | 123 | | | 123 | Not completed in the Aquifer | Not suitable for aquifer monitoring. |
| USGS-062 | 698067.549 | 291977.183 | NF | 145 | 165 | | | 165 | Not completed in the Aquifer | Not suitable for aquifer monitoring. |
| USGS-063 | 699038.148 | 289475.618 | 105 | 62 | 110 | | | 110 | Not completed in the Aquifer | Not suitable for aquifer monitoring. |

**Table C-5.** (continued).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|
| USGS-065 | 698168.923 | 288957.127 | 490 | 472 | 498 | ~456 | 472 | 498 | Open borehole 456-498 ft. No screen. 4.5" carbon steel casing to 456 ft, installed in 1906. Pump @ 490 ft. Water level~ 464 ft. | 4.5" casing will make retrofitting difficult. |
| USGS-066 | 697345.315 | 292670.241 | NF | 160 | 200 | | | 475 | Well has been filled with concrete to 220 ft. | Not suitable for aquifer monitoring. |
| USGS-069 | 698497.25 | 290268.607 | 110 | 95 | 115 | | | 115 | Well only 115 ft deep, | Not suitable for aquifer monitoring. |
| USGS-071 | 697429.857 | 291286.955 | NF | 141.82 | 150.42 | 156.17 | 175.5 | 184 | Well is only 184 ft deep. | Not suitable for aquifer monitoring. |
| USGS-073 | 699591.243 | 288486.662 | NE | 62 | 127 | | | 127 | Well is only 127 ft deep. | Not suitable for aquifer monitoring. |
| USGS-074 | 700067.693 | 287619.28 | NE | 32 | 192 | | | 192.0 | Well is only 192 ft deep. | Not suitable for aquifer monitoring. |
| USGS-076 | 695976.979 | 290027.333 | 502 | 457 | 718 | | | 718 | 6.6" carbon steel casing to 457 ft, 6" open borehole 457-718. Water level ??. Pump @ 514 ft. | Can be retrofitted and packers used to isolate monitoring zone |
| USGS-079 | 700078.447 | 286621.477 | 522 | 281 | 702 | | | 702 | 6.6" cs casing to 281 ft, 6" open borehole 281-702. Water level ~474 ft. Pump @ 522. | Can be retrofitted and packers used to isolate monitoring zone |
| USGS-098 | 711301.157 | 294293.162 | 423 | 401 | 421 | 463 | 505 | 505 | 6" cs casing to 407, 4" perforated cs screen installed in 1973. No annular seal separating the screened intervals. Water level ~ 397 ft. Pump @ 430 . | 4" screen may be difficult to retrofit. The well is a long way from the facility. |
| USGS-099 | 711928.287 | 299826.431 | 427 | 449 | 450 | ~340 | 449 | 450 | 6" cs casing to 344 ft. 4" perforated cs screen 340-449 ft, installed in 1974. Large screened interval. Water level ~ 385 ft. Pump @ 430 ft. | Can be retrofitted, and packers used to isolate monitoring zones. The well is a long way from the facility. |
| Fire Station | 704351.01 | 295185.47 | NF | 426.95 | 466.81 | 501.25 | 511.25 | 518.10 | 10" cs casing 427 ft with clay annular seal. Cement grout in upper 5 ft of the screen? Perforated 10" cs screen 427-466, and 501-511, with a gravel pack from 435-513 ft. No isolation of screened intervals. Waterlevel ~ 420. Drilled 1957 | Two connected screened intervals. Can be retrofitted, but the well is a long way from the facility |




Possible to use for sitewide groundwater monitoring well net if retrofitted

Wells do not meet the needs for sitewide groundwater monitoring

Possible fill-in wells to be added to the sitewide groundwater monitoring network

**Figure C-6.** Map of INEEL Site-wide Well Network INTEC Wells (WAG 3).

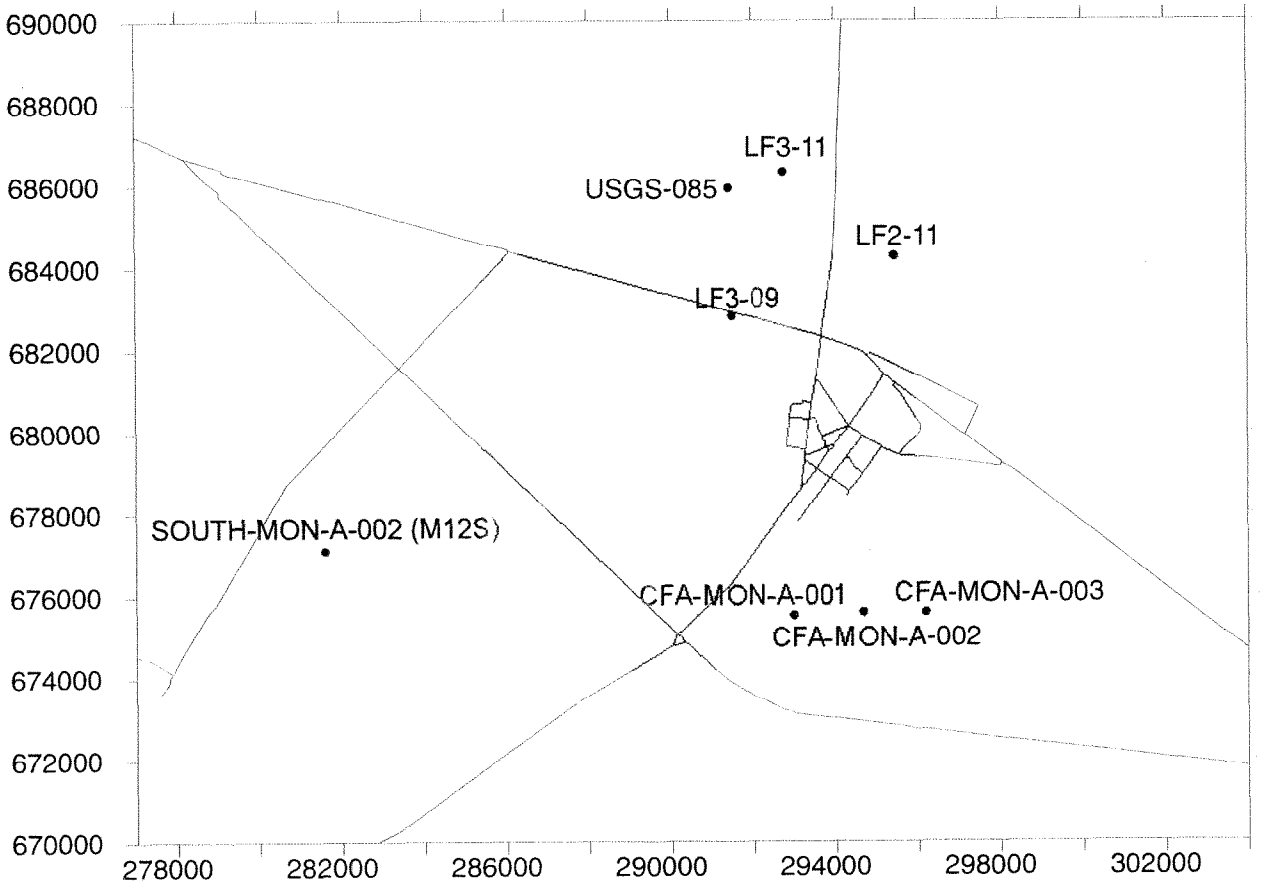
**Table C-6.** INEEL Sitewide Well Network INTEC Wells (WAG 3).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH_BLS | SCREEN TOP | SCREEN BOTTOM | SCREEN_2 TOP | SCREEN_2 BOTTOM | BORE_HOLE DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USGS-034 | 690800.409 | 292742.894 | 518 | 500 | 578 | | | 700 | 699.86 | 10" cs casing to 500 ft, with puddling clay for annular seal Installed in 1954. 10" open borehole 500-578. 8" cs casing 578-700, with no annular fill. Water level ~ 464 ft. | Could easily be retrofitted, and packered off between 500-578. |
| USGS-035 | 691251.786 | 292498.684 | 523 | 142.5 | 578.5 | | | 578.5 | 578.5 | 8" cs casing to 143 ft. Annular seal ??. 7" open borehole 143-578 ft. Water level ~ 468 ft. | Good location. Could be easily retrofitted. Packers could seal off the monitoring zone in the open borehole. |
| USGS-036 | 690359.701 | 292981.028 | 521 | 430 | 567.1 | | | 567.1 | 567.1 | 6.25" cs casing to 430 ft installed in 1955. No annular seal??. 6" open borehole 430-567. Water level ~ 468 ft. | Good location. Could be retrofitted. Monitoring interval could be isolated by packers. |
| USGS-037 | 689921.261 | 293222.646 | 506 | 507 | 571.5 | | | 571.5 | 571.5 | 6.25" cs casing to 507 ft installed in 1955. No annular seal??. 6" open borehole 507-571. Water level 468 | May not be useful for monitoring metals, could be retrofitted. |
| USGS-038 | 689568.16 | 293578.005 | 522 | 678 | 729 | | | 729 | 724 | 6.25" cs casing to 505 ft. 4" cs casing 427-678 ft bls. Water level ~ 469 ft. Open borehole 678 to 729 ft. Bottom of the hole is filled with sediment from ~ 610-729 ft. No annular seal | Not recommended, bottom of the hole has been filled with sediment, so there is no screened interval. |
| USGS-039 | 691691.349 | 292260.967 | 485 | 46.6 | 152 | 48 | 493 | 572 | 571.89 | 12" cs casing to 48 ft. 10" open borehole to 152 ft, 8" open borehole to 493 ft. Water level ~ 470 ft. Borehole from 493-572 back-filled with drill cuttings. | Long interval of open borehole above the water table, could be retrofitted if necessary, but not recommended. |
| USGS-077 | 688822.473 | 296494.362 | 502 | 470 | 586 | | | 610 | 610 | 6.6" cs casing to 470ft installed in 1962. Annular seal??. 6" open borehole 470-586 ft. Water level ~ 465 ft, | Good location. Could be easily retrofitted. Packers could seal off the monitoring zone in the open borehole. |
| USGS-082 | 693412.019 | 300455.277 | 508 | 470 | 570 | 593 | 693 | 700 | 700 | 8.6" cs casing, perforated 6.6" cs screen installed in 1962. Open borehole 593-693. Annular seal?? Water level ~ 447 ft. | Good location. Large screened interval with no way to isolate zones. Questionable annular seal. Could be retrofitted, but not recommended |
| USGS-112 | 688765.265 | 294492.92 | 508 | 430 | 444 | 444 | 563 | 563.0 | 563.0 | 8" cs casing to 430 ft installed in 1984. Discontinuous cement annular seal. 8" open borehole 430-563 ft. Water level ~ 465 ft. | Good location. Could be easily retrofitted. Packers could seal off the monitoring zone in the open borehole. |
| USGS-113 | 688760.323 | 295409.703 | 508 | 443 | 561 | | | 564 | 564 | 6" cs casing to 443 ft, installed in 1984. Discontinuous cement annular seal. 6" open borehole 443-551 ft. Water level ?? | Good location. Could be easily retrofitted. Packers could seal off the monitoring zone in the open borehole. |
| USGS-114 | 689180.424 | 297441.72 | 508 | 440 | 560 | | | 562.5 | 562.5 | 6" cs casing to 440 ft, installed in 1984. Discontinuous cement annular seal. 6" open borehole 444-560 ft. Water level ?? | Good location. Could be easily retrofitted. Packers could seal off the monitoring zone in the open borehole. |

**Table C-6.** (continued).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP | SCREEN | | SCREEN_2 | | BORE_HOLE | COMPLETION | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | DEPTH_BLS | TOP | BOTTOM | TOP | BOTTOM | DEPTH_BLS | DEPTH_BLS | | |
| USGS-115 | 689310.474 | 298132.387 | 507 | 437 | 580 | | | 581 | 581 | 6" cs casing to 437 ft . 6" open borehole 437-580 ft. Discontinuous cement annular seal. Water level ~ 458 ft. | Could easily be retrofitted. |
| USGS-116 | 690452.307 | 298785.166 | 508 | 401 | 438 | 438 | 572 | 580 | 580 | 6" carbon steel casing to 401 ft. Open borehole 401-572. Water level ~ 452. PVC water access line. Concrete annular seal is not continuous | Good location. Could be retrofitted. Monitoring interval could be isolated by packers. |
| USGS-121 | 698363.241 | 296600.836 | 460 | 449 | 475 | | | 745.8 | 485.0 | 8" cs casing to 432 ft. 6" ss casing to 449 ft, with a K packer seal at the casing reduction, with cement grout above (to surface). 6" slotted ss screen 449-475. No annular fill material in the screened interval (below the packer). | Good location. Could be retrofitted |

# CENTRAL FACILITIES AREA
# LONG TERM GROUNDWATER MONITORING




- Possible to use for sitewide groundwater monitoring well net if retrofitted
- Wells do not meet the needs for sitewide groundwater monitoring

Possible fill-in wells to be added to the sitewide groundwater monitoring network

**Figure C-7.** Map of INEEL Site-wide Well Network CFA Wells (WAG 4).

**Table C-7.** INEEL Sitewide Well Network CFA Wells (WAG 4).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP | SCREEN | | SCREEN | | BORE_HOLE | COMPLETION | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | TOP | BOTTOM | TOP | BOTTOM | DEPTH_BLS | DEPTH_BLS | | |
| CFA-MON-A-001 | 675528.007 | 293001.565 | 512 | 488 | 518 | | | 547 | 527 | 5" ss casing to 488 ft with cement annular seal with cement annular seal. 5" ss wire wrapped screen 488-518 with sand pack. Water level ~492 | Good location. Can be retrofitted |
| CFA-MON-A-002 | 675602.344 | 294700.999 | 512 | 488 | 518 | | | 526 | 522 | 5" ss casing to 488 ft with cement annular seal. 5" ss wire wrapped screen 488-518 with sand pack. Water level ~488 | Good location. Can be retrofitted |
| CFA-MON-A-003 | 675593.81 | 296205.197 | 493.5-495. | 490.9 | 510.9 | | | 515 | 490-510.9 | 5" ss casing to 491 ft with cement annular seal. 5" ss wire wrapped screen 491-511 with sand pack. Water level ~487. Galvanized discharge line. | Good location. Can be retrofitted |
| LF2-11 | 684290.868 | 295462.444 | 481 | ~466 | 499 | | | 510.85 | 499 | 4" cs casing to 460 ft (installed 1989)with cement grout annular seal. 4" ss slotted screen 466-499. Dielectric coupler joining the dissimilar metal. Sand pack around the screen. Water level ~ 470 | 4" casing and screen may be more difficult to retrofit |
| LF3-09 | 682824.229 | 291516.447 | 488.4 | 480 | 500 | | | 517 | 500 | 4.5" ss casing to 480 ft (installed 1990) with cement grout annular seal. 4.5" wire wrap ss screen 480-500. Screened annulus, and borehole below 500 filled in with silica sand. | May not be a sufficient monitoring interval. Well only penetrates the upper 15 ft of aquifer. 17 ft of silica sand fills the lower portion of the borehole. |
| LF3-11 | 686244.263 | 292688.223 | 485.06 | 472.2 | 492.2 | | | 532.0 | 492.2 | 4.5" ss casing to 472 ft (installed 1990) with cement annular seal. 4.5" wire wrap ss screen 472-492 ft. Screened annulus and borehole below 492 ft is filled with silica sand. Water level ~ 478 ft. | Good location. May not be a sufficient monitoring interval. Well only penetrates the upper 15 ft of aquifer. 40 ft of silica sand fills the lower portion of the borehole. |
| LF3-11A | 686412.7 | 292601.45 | NE | NF | NF | | | 497.0 | 397.0 | Borehole is cemented to the land surface (decommissioned). | Plugged and decommissioned |
| SOUTH-MON-A-002 | 677144.786 | 280877.379 | 560.2 | 528 | 538 | 548 | 568 | 585.5 | 572 | 6" ss casing to 528 ft, with cement annular seal. 6" ss screen 528-538, and 548-568, with sand pack. Water level ~ 533. Drilled 1998 | Good location, can be retrofitted, but no seal between screened intervals. |
| USGS-085 | 685931.535 | 291435.451 | 514 | 522 | 614 | | | 637 | 637 | 6.6" cs casing to 522 ft. No annular seal??. 6" open borehole 522-614. Sediment backfill 637-614 ft. Water level ~ 482 ft. | Can be retrofitted, and packers used to isolate monitoring zone. |

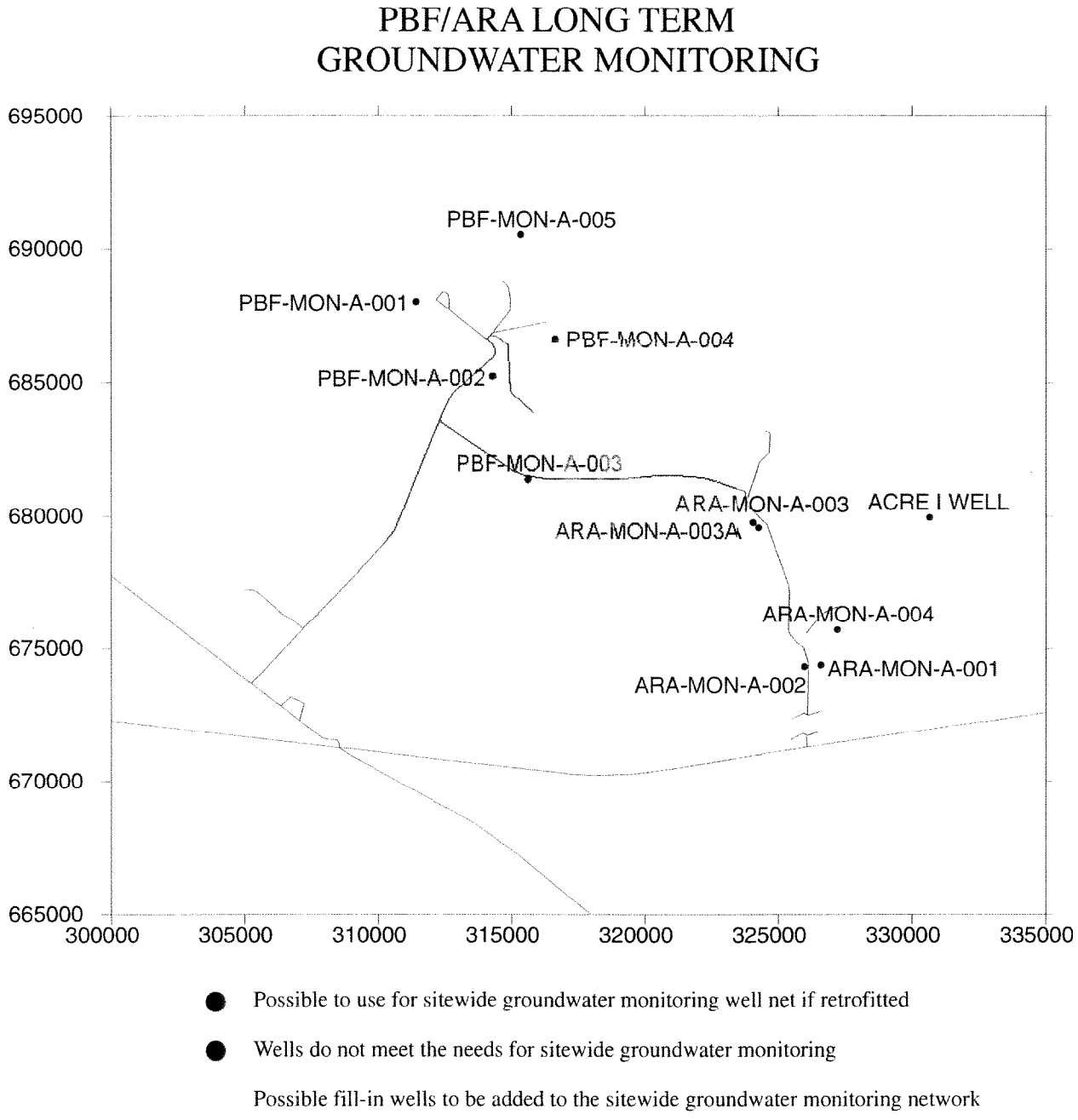
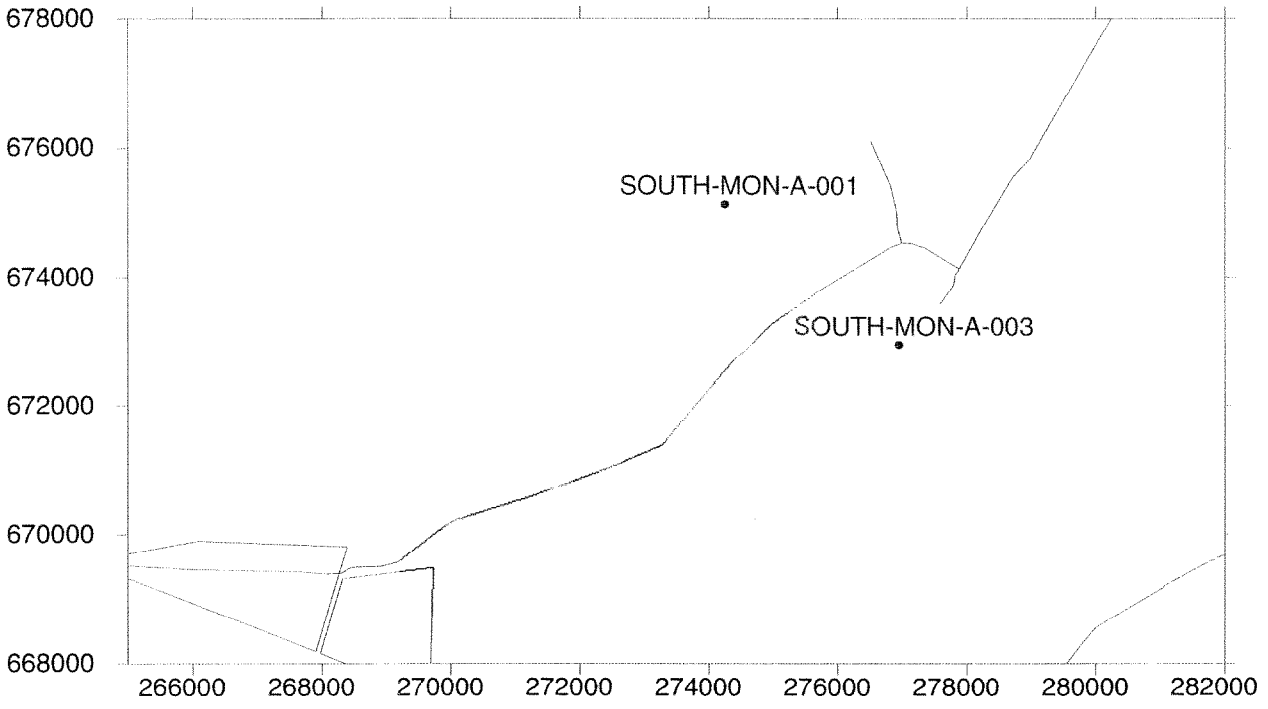



**Figure C-8.** Map of INEEL Site-wide Well Network PBF/ARA Wells (WAG 5).

**Table C-8.** INEEL Sitewide Well Network PBF/ARA Wells (WAG 5).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | BORE_HOLE DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ACRE I WELL | 679951.26 | 330653.2 | NF | NF | NF | | | NF | NF | Well file contains only coordinate information | No information |
| ARA-MON-A-001 | 674397.349 | 326603.744 | 620 | NF | NF | | | 596 | 640 | 5" ss casing to 620 ft with cement annular seal. 5" ss screen 620-640 with sand pack. Water level ~596 ft. Drilled in 1994 | Good well construction, can be retrofitted. Good location |
| ARA-MON-A-002 | 674333.598 | 325984.061 | 604.3 | NF | NF | | | 629 | 620 | 5" ss casing to 600 ft with cement annular fill. 5" ss screen 600-620 with sand pack. Water level ~ 594 ft. Drilled 1994 | Well only penetrates upper 25 ft of the aquifer . Could be retrofitted |
| ARA-MON-A-003 | 679568.129 | 324270.001 | NF | NF | NF | | | 125 | NA | well is only 125 ft. Not drilled into the aquifer | Not an aquifer well |
| ARA-MON-A-003A | 679585.46 | 324177.75 | 622 | 624 | 644 | | | 655 | 644 | 5" ss casing to 624, with cement annular seal, 5" ss screen 624-644 with filter pack. | Good location, good well |
| ARA-MON-A-004 | 675711.274 | 327222.399 | 632 | NF | NF | | | 665 | 645 | 5" ss casing to 625 ft with cement annular seal. 5" ss screen 625-645 with sand pack. Water level ~ 617 ft. Drilled in 1994. | Good well, can be retrofitted.. |
| PBF-MON-A-001 | 688012.81 | 311424.867 | 483 | 454 | 484 | | | 495 | 489 | 5" ss casing to 454 ft with cement annular seal. 5" ss screen 454-484 with filter pack. Water level ~ 450 Galvanized discharge line. Drilled 1994 | Good well, can be retrofitted |
| PBF-MON-A-002 | 685239 | 314299 | NF | NF | NF | | | 535 | 498 | 5" ss casing to 468 ft with cement annular seal. 5" ss screen 468-498 with filter pack. Water level ~ 470 Galvanized discharge line. Drilled 1994 | Good well, can be retrofitted. Well only penetrates upper 25 ft of aquifer. |
| PBF-MON-A-003 | 681377.692 | 315641.804 | 572 | 545 | 575 | | | 605 | 575 | 5" ss casing to 545 ft with cement annular seal. 5" ss screen 545-575 with filter pack. Water level ~ 520. Drilled 1994 | Good well, can be retrofitted |
| PBF-MON-A-004 | 686644.783 | 316649.583 | 525 | 522 | 542 | | | 545 | 522-542 | 5" ss casing to 522 ft with cement annular seal. 5" ss wire wrapped screen 522-542 ft. Water level ~ 491 ft. Drilled in 1995 | Good well construction, can be retrofitted. Good location |
| PBF-MON-A-005 | 690527.222 | 315361.015 | 525 | 511 | 531 | 516 | 536 | 545 | 511-531 | 5" ss casing to 516 ft with cement annular seal. 5" ss wire wrapped screen 516-536 with filter pack. Water level ~ 512 ft. Galvanized discharge line. Drilled 1995 | Good well, can be retrofitted |

# EBR1 LONG TERM GROUNDWATER MONITORING




● Possible to use for sitewide groundwater monitoring well net if retrofitted

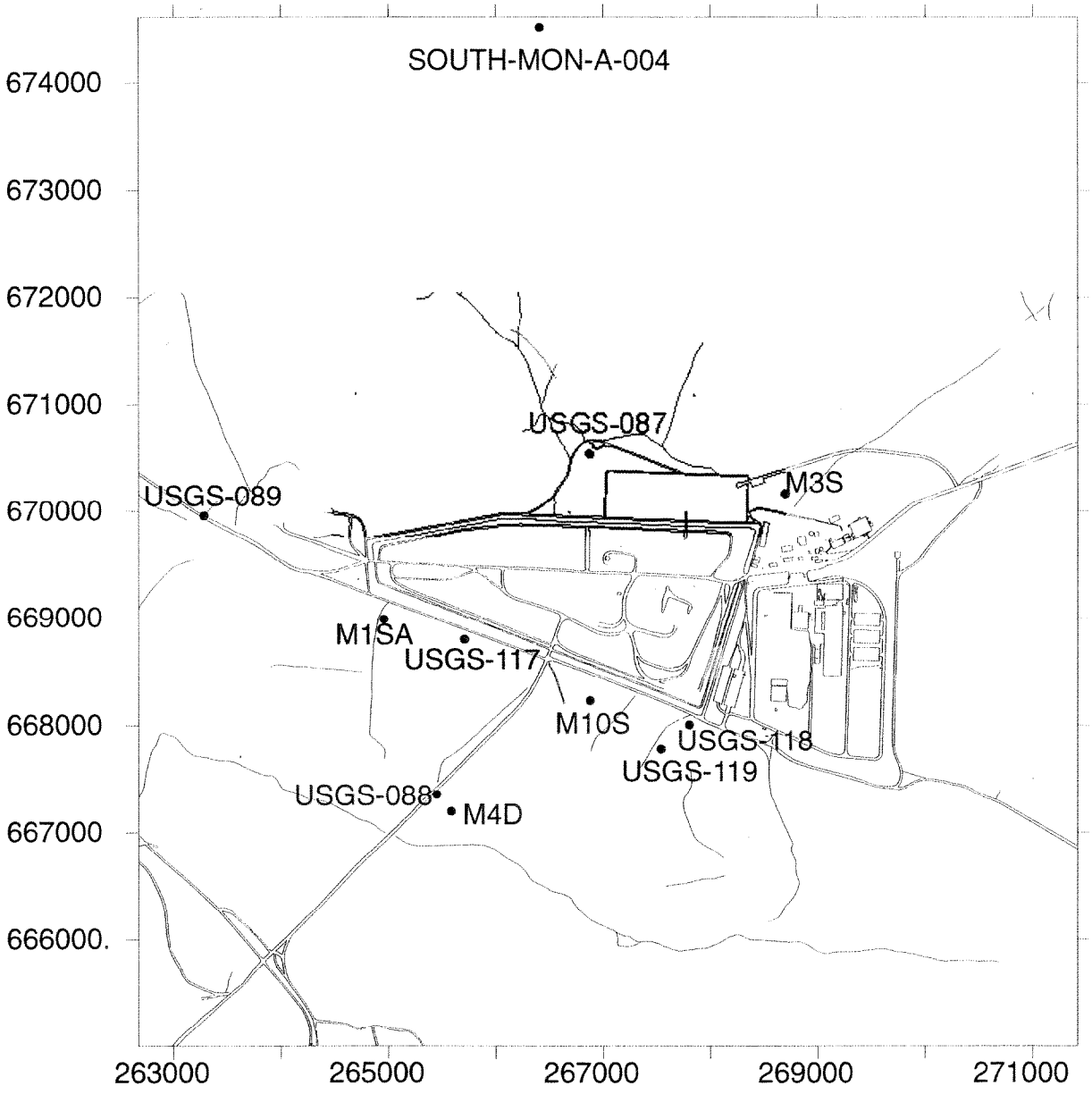
Possible fill-in wells to be added to the sitewide groundwater monitoring network

**Figure C-9.** Map of INEEL Site-wide Well Network EBR-I (Wag 6).

**Table C-9.** INEEL Site-wide Well Network EBR-I (WAG 6).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP | SCREEN | | SCREEN | | BORE_HOLE | COMPLETION | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | TOP | BOTTOM | TOP | BOTTOM | DEPTH_BLS | DEPTH_BLS | | |
| SOUTH-MON-A-001 | 675132.008 | 274247.382 | 607.2 | 559 | 569 | 604 | 624 | 624 | 624 | 6" ss casing to 604 ft with cement annular seal. 6" ss screen 604-624 with sand pack. Water level ~ 567. Drilled in 1998. Galvanized water access line. Vapor port installed | Good location, can be retrofitted |
| SOUTH-MON-A-003 | 672953.048 | 276944.776 | 632.7 | 593.1 | 603.1 | 623.1 | 643.1 | 645.5 | 643.1 | 6" ss casing to 593 ft with cement annular seal. 6" ss screen 593-603, and 623-649. Water level ~ 599 with sand pack. Drilled in 1998. Galvanized water access pipe. Vapor port installed | Good location, can be retrofitted |

# RADIOACTIVE WASTE MANAGEMENT COMPLEX
# LONG TERM GROUNDWATER MONITORING



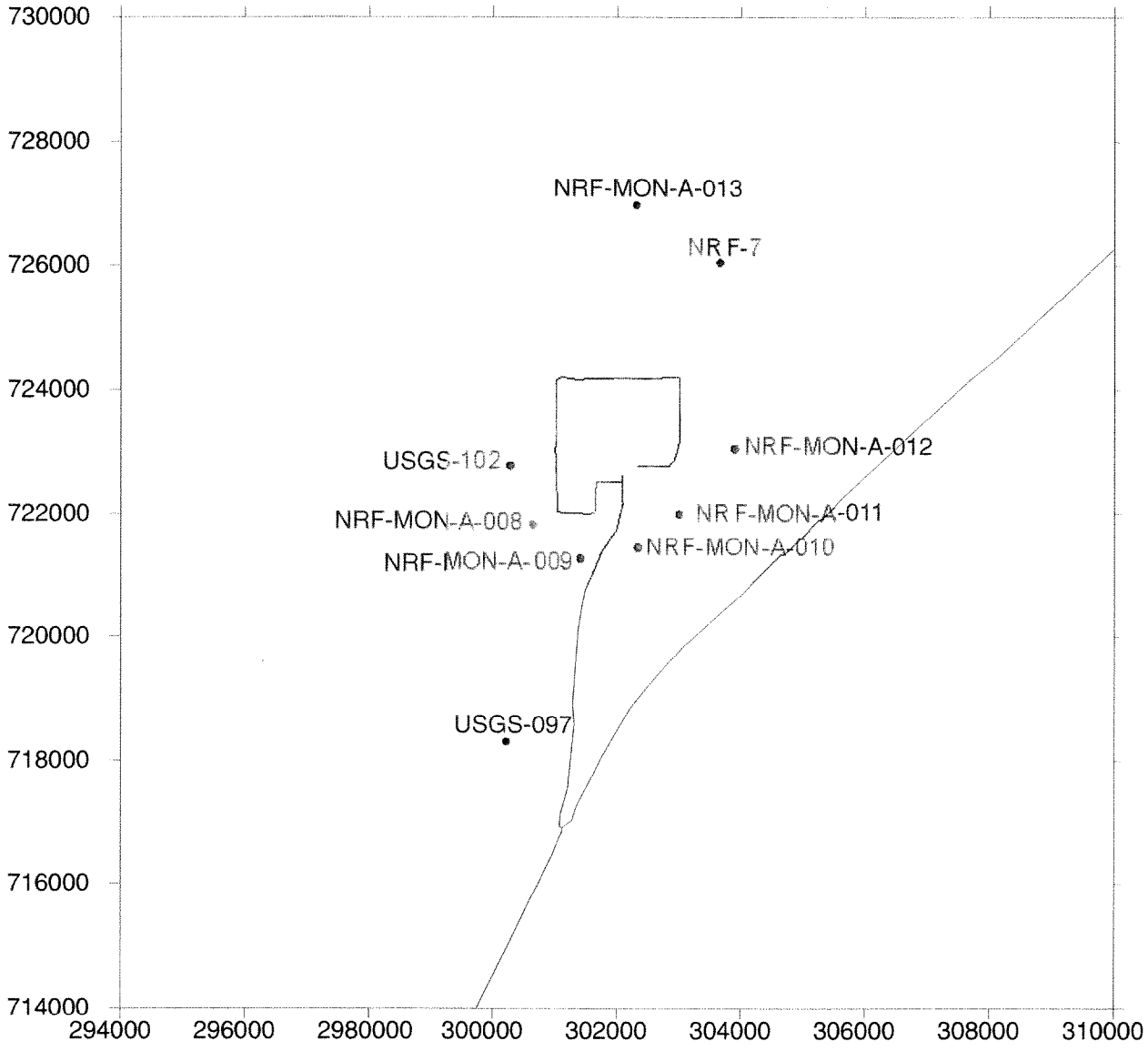

- Possible to use for sitewide groundwater monitoring well net if retrofitted
- Wells do not meet the needs for sitewide groundwater monitoring
- Possible fill-in wells to be added to the sitewide groundwater monitoring network

**Figure C-10.** Map of INEEL Sitewide Well Network RWMC (WAG 7).

**Table C-10.** INEEL Sitewide Well Network RWMC (WAG 7).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | BORE_HOLE DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M10S | 668226.77 | 266881.54 | 640 | 618 | 648 | | | 678 | 678 | 6" ss casing to 618 ft. 6" wire wrapped ss screen 618-648 ft. 4 Vapor ports attached to the casing. Good seal and sand pack. Water level ~ 596 ft. Broken cs water level measuring tape down hole. | Good location, but reaction of carbon steel water level tape with Cl containing contaminants makes sample results suspect |
| M3S | 670165.17 | 268700.16 | 625 | 602.8 | 632.8 | | | 660 | 660 | 6" ss casing to 603 ft with cement annular seal. 6" ss wire wrapped screen 603-632 with sand pack. 3 vapor ports installed in the well. Water level ~ 590 ft. Drilled in 1992 | Good location, can easily be retrofitted |
| M4D | 667255.3 | 265509.57 | 826 | 798 | 828 | | | 838 | 838 | 6" ss casing to 798 ft with cement annular seal. 6" cc wire wrapped screen 798-828 with sand pack. Water level ~ 596. 3 vapor ports in the well. Drilled in 1992 | Good location. Can easily be retrofitted. However well is cased 200 ft into the aquifer, so, can't monitor the upper portion of the aquifer. |
| SOUTH-MON-A-004 | 674610.462 | 266412.654 | 632.7 | 583.6 | 604.6 | 624.6 | 634.6 | 645 | 645 | 6" ss casing to 584 ft with cement annular seal. Ss 6" screen 548-604, & 624-634, with sand pack. No isolation of screened zones. Water level~ 600. Drilled 1998. | No annular seal between the screened intervals. |
| USGS-087 | 670635.192 | 266881.409 | 610 | 585 | 673 | | | 673 | 673 | 6" (cs ?) casing to 568 ft with cement annular seal. 4" perforated (cs?) screen 585-673 ft (with sand pack?). Water level ~ 582 ft. | Good location, but 4" screen may be difficult to retrofit. Large screened interval with no way to isolate zones |
| USGS-088 | 667355.516 | 265453.286 | 629 | 584 | 635 | | | 663 | 663 | 6" cs casing to 587 ft with cement annular seal. 6" open borehole 587-635 ft. Water level ~ 584 ft. Drilled in 1971 | Good location can be retrofitted. |
| USGS-089 | 669975.84 | 263277.48 | 620 | 576 | 646 | | | 646 | 576 | 6" cs casing to 576 with cement annular seal. 6" open borehole 576-646 ft. Water level ~590 ft. | Could be retrofitted, and monitoring zones isolated with packers. |
| USGS-117 | 668800.352 | 265711.169 | 635 | 550 | 653 | | | 655 | 655 | 8.6" cs casing to 553ft with discontinuous cement seal. 6" perforated ss screen 550-653. No documentation of sand pack or dielectric coupler. Water level ~ 581. | Can be retrofitted, but large screened interval with no way to isolate zones. |
| USGS-118 | 668007.428 | 267802.072 | NF | 587.2 | 608 | | | 622 | 610 | 2" galvanized casing and screen. So small to use as monitoring well | 2" casing and screen is to small to retrofit. Not recommended for use |
| USGS-119 | 667779.641 | 267541.409 | 685 | 639 | 705 | | | 705 | 705 | 8.6" cs casing to 584 ft with cement annular seal. Perforated 6.6" ss screen. Sand pack??? Water level ~ 601 ft. Galvanized water access line. | Can be retrofitted. Fairly large screened interval with no way to isolate a smaller zone. |
| SOUTH-MON-A-010 | | | | | | | | | | Well is new, well file is currently being complied | NO file |
| M1SA | 668991.56 | 264962.09 | 633 | 608 | 638 | | | 678 | 638 | 6" ss casing to 608 ft with cement annular seal. Wire wrapped 6" ss screen with sand pack. Water level ~ 586 ft. 3 vapor ports installed. Drilled 1992. | Good location, can easily be retrofitted. |

# NAVAL REACTORS FACILITY
# LONG TERM GROUNDWATER MONITORING




Possible to use for sitewide groundwater monitoring well net if retrofitted

Wells do not meet the needs for sitewide groundwater monitoring

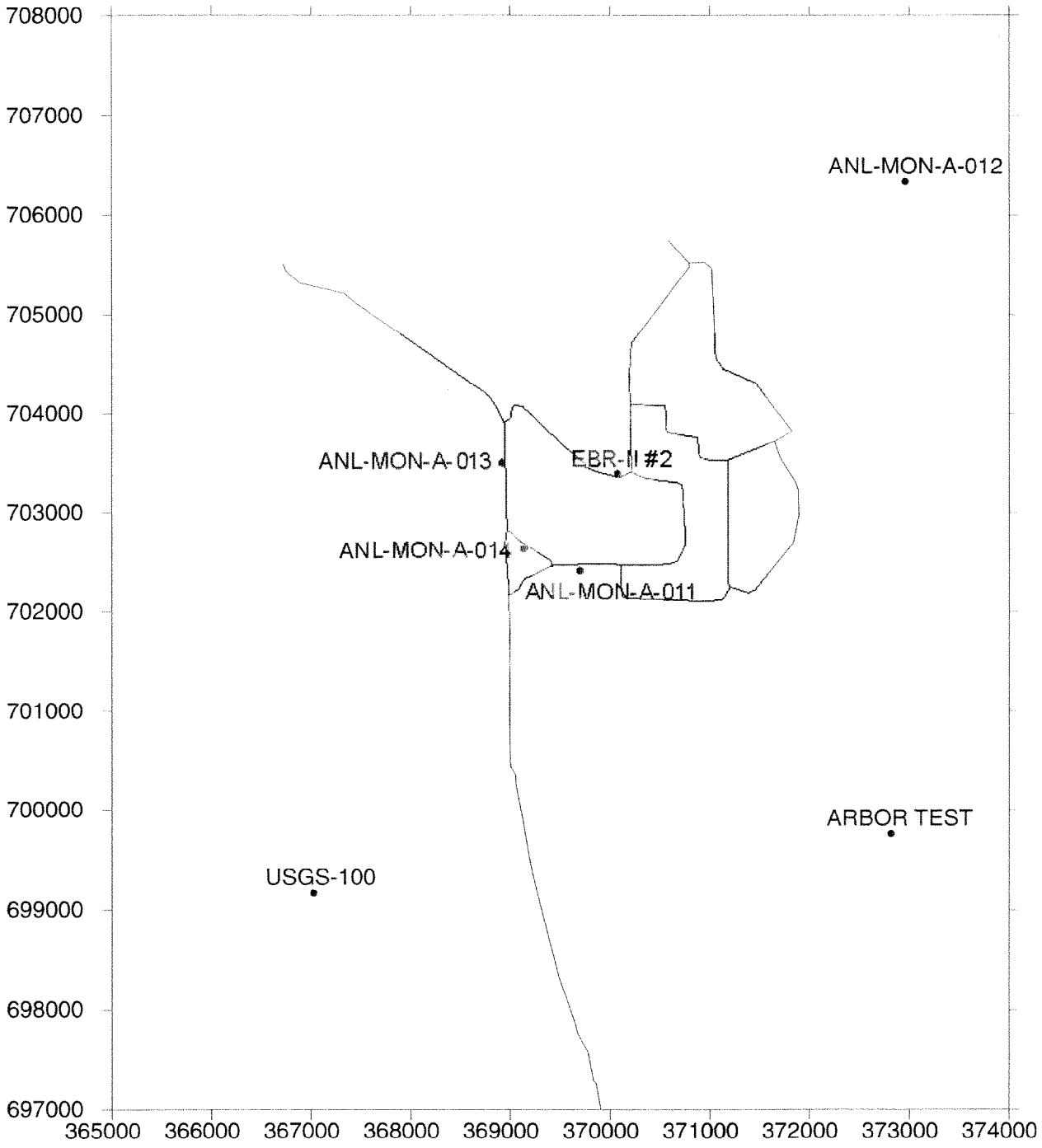
Possible fill-in wells to be added to the sitewide groundwater monitoring network

**Figure C-11.** Map of INEEL Site-wide Well Network NRF (WAG 8).

**Table C-11.** INEEL Site-wide Well Network NRF (WAG 8).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | BORE_HOLE DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|
| NRF-7 | 726047.618 | 303659.814 | NF | NF | NF | NF | NF | 8" casing, galvanized water access line. Very little info | May be useful, but need more info, can likely be retrofitted |
| NRF-MON-A-008 | 721822.971 | 300645.484 | 415 | 373 | 423 | 425 | 423 | 8" ss casing to 315 6" ss casing 290-373 with cement annular seal and rubber packer at casing reduction 6" ss screen 373-423. Water level ~ 380. | Good location and well construction. |
| NRF-MON-A-009 | 721266.886 | 301409.129 | 412 | 372 | 422 | 425 | 422 | 8" cs casing to 309 with cement annular seal. 6" ss 289-273 with rubber packer at reduction. 6" ss screen 373-422. Water level ~ 381. | Good location and well construction. |
| NRF-MON-A-010 | 721447.525 | 302331.242 | 415 | 377 | 427 | 450 | 427 | 8" cs casing to 298 with cement annular seal. 6" ss 279-377 with rubber packer at reduction. 6" ss screen 377-427. Water level ~ 381. | Good location and well construction. |
| NRF-MON-A-011 | 721992.225 | 303001.483 | 409 | 367 | 417 | 425 | 417 | 8" cs casing to 310 with cement annular seal. 6" ss 284-267 with rubber packer at reduction. 6" ss screen 367-417. Water level ~ 380. | Good location and well construction. |
| NRF-MON-A-012 | 723044.272 | 303896.545 | 414 | 371 | 421 | 425 | 421 | 8" cs casing to 310 with cement annular seal. 6" ss 288-371 with rubber packer at reduction. 6" ss screen 371-421. Water level ~ 379. | Good location and well construction. |
| NRF-MON-A-013 | 726981.239 | 302308.133 | 405 | 375 | 425 | 425 | 425 | 8" cs casing to 320 with cement annular seal. 6" ss 297-375 with rubber packer at reduction. 6" ss screen 375-425. Water level ~ 369. | Good location and well construction. |
| USGS-097 | 718307.009 | 300209.724 | 402 | 388 | 510 | 510 | 510 | 4" cs casing to 388 ft, (no annular seal?). 4" open borehole 388-510. Water level ~ 368 ft. Drilled in 1973 | 4" borehole may be difficult to retrofit. Monitoring zone could be packer isolated |
| USGS-102 | 722771.847 | 300274.478 | 421 | 359 | 444.6 | 444.6 | 444.6 | 6" cs casing to 360 ft with cement annular seal. 6" open borehole 360-445. Water level ~ 367 ft. Drilled in 1989. No lithologic log. | Can be retrofitted, packers may be used to isolate monitoring zones. |

# ARGONNE NATIONAL LABORATORY WEST
# LONG TERM GROUNDWATER MONITORING




● Possible to use for sitewide groundwater monitoring well net if retrofitted

● Wells do not meet the needs for sitewide groundwater monitoring

Possible fill-in wells to be added to the sitewide groundwater monitoring network

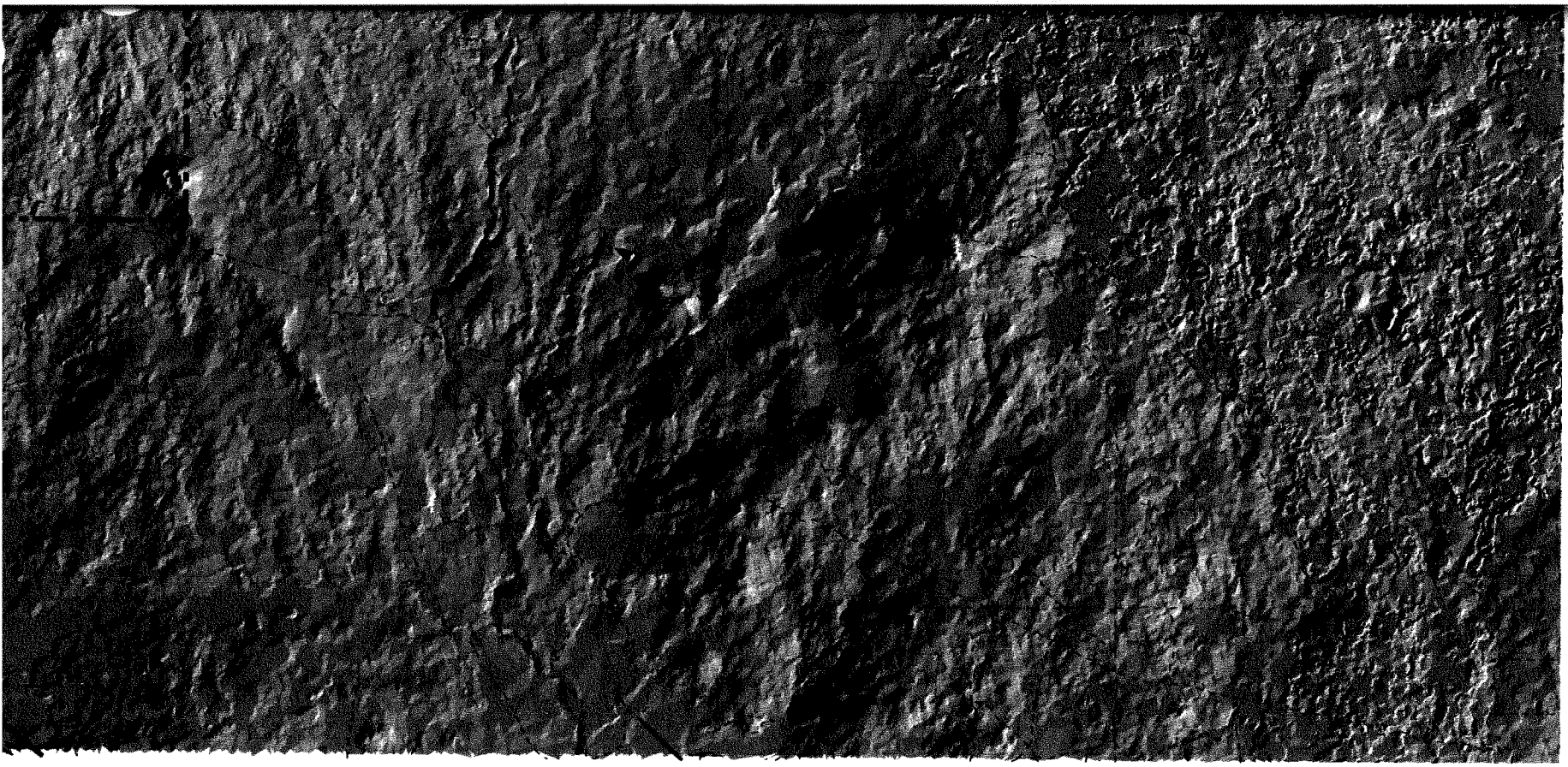
**Figure C-12.** Map of INEEL Site-wide Well Network ANL-W (WAG 9)

**Table C-12.** INEEL site-wide Well Network ANL-W (WAG 9).

| WELL_NAME | NORTH_27 | EAST_27 | PUMP DEPTH | SCREEN TOP | SCREEN BOTTOM | SCREEN TOP | SCREEN BOTTOM | BORE_HOLE DEPTH_BLS | COMPLETION DEPTH_BLS | COMMENTS | RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ANL-M11 | 702420.364 | 369697.467 | 642 | 231 | 602 | 614.1 | 649.1 | 677.2 | 677.2 | 8" casing to 231 ft with cement annular seal. 8" perforated cs screen 231-602 ft, with cement annular seal. 6" ss casing 589-614 with a K packer at the casing reduction. 6" ss wire wrapped screen 614-649 with sand pack. Water level ~ 634. Drilled 1991 | Good location, well can be retrofitted. |
| ANL-MON-A-012 | 706333.36 | 372959.367 | NF | NF | NF | | | NF | NF | No well file, coordinates only | No file, not recommended |
| ANL-MON-A-013 | 703508.369 | 368919.573 | 645 | 367 | 662 | | | 668 | 662 | Conflicting data, uncertain of casing and screen intervals, and coordinates | Not recommended for use until well data questions cam be resolved |
| ANL-MON-A-015 | 702636.445 | 369141.524 | 655 | NF | NF | | | 682 | 673 | 8" cs casing to 630 ft 6" ss casing 618-643 with K packer at casing reduction. 6" ss screen 643-668. Drilled in 1997. PVC water access line. | Good location, well can be retrofitted. |
| USGS-100 | 699166.161 | 367025.133 | 703 | 662 | 750 | | | 750 | 750 | 6" cs casing to 662 ft with discontinuous cement annular seal. 6" open borehole 662-750. Water level ~ 672. Drilled 1974. | Good location, can be retrofitted and packers used to isolate monitoring zones |
| ARBOR TEST | 699759.119 | 372818.19 | 720 | 679.94 | 730.49 | 737.49 | 787.00 | 790 | 790 | 10" cs casing to 680 , perforated 10" cs screen 680-730, & 737-787ft. Water level ~ 675ft. Gravel pack from 3ft to 787 ft, with clay material backfill from land surf to 3ft. | Gravel annular fill, Not recommended |
| ANL-OBS-A-001 | | | NF | NF | NF | | | 1910 | 1734 | 4" casing. PVC pipe installed for downhole shear wave logging. | Not recommended because of small diameter and PVC casing. |

**NOTE:** Several wells at ANL have questionable data such as well name, and actual well construction. This problem is currently being resolved.

**Section C-13.** INEEL 7.5' Shaded Relief and Active Aquifer Maps.



660,000
650,000
640,000
630,000
620,000

370,000 380,000 390,000 400,000 410,000 420,000 430,000 440,000

Note: The Big Lost River is prevented by the axial ridge of the ESRP from flowing into the Snake River. The Snake River flows in a southwesterly direction along the ESRP about 30 km to the southeast of the INEEL.

The wells for this map were derived from a download of the INEEL ERIS Wells Database (8/28/2000). 313 active aquifer wells are shown on this map. A mixture of actual well names and aliases were used on this map. For a copy of the alias list used in this map contact the GIS Lab at 526–3529.

Drawn by: Dan Mahnami


Location Map

Contour Interval: 5ft. & 40ft.
Index Contours: 200ft.
Projection: STATE PLANE
Units: FEET
Zone: 3701
Datum: NAD27

**INEEL SPATIAL ANALYSIS LABORATORY**

*APPLYING TECHNOLOGY TO MEET ENVIRONMENTAL NEEDS*

(/projects/ineel/well_maps: active_aqu_wells_shdrelief-ep_v1)